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EXAMINER

POLTORAK, PIOTR

ART UNIT

PAPER NUMBER

2134

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/876,351

Applicant(s)

JOSEPH ET AL.

Examiner

Peter Poltorak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Amendment, and remarks therein, received on 4/11/2005 have been entered and carefully considered.
2. The Amendment introduces new limitations into the originally sole independent claims 1, 11 and 15. The newly introduced limitation has required a new search and consideration of the pending claims. The new search has resulted in newly discovered prior art. New grounds of rejection based on the newly discovered prior art follow below.
3. Claims 1, 3-8, 10-18 have been examined.

Drawings

4. The drawings are objected to because Fig. 3 and Fig. 4 present two different table that are labeled with the same name. The specification disclose that Fig. 4 represents "a channel key table" and not "a channel state table".
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several

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views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 8 10-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
7. Claims 1, 8 10-14 recite the term hardware (and hardware mechanism) that performs functions such as verifying the identification of the second node, establishes a channel etc. However, the specification does not disclose any particular circuitry of the hardware (for example) that would allow one of ordinary

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skill in the art determine how the implementation of such a hardware could satisfy the claim limitations.

For purposes of further examination the phrase in conjunction with the particular functionality of the hardware is treated as software or processes implemented on the hardware.

8. Claims 3-7 are rejected by virtue of their dependence.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1, 3-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

10. No support is found in the specification for the newly introduced limitations in claim

1: "sending a key, identification of the first node, and identification of the second node from hardware of the first node accessible only by a kernel agent of the first node to hardware of the second node accessible only by a kernel agent of the second node".

11. Claims 3-8 and 10 are rejected by virtue of their dependence.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1, 3-8, 10-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claims 1, 8, 11-12, 14-16 and 18.

14. The following limitation: "the keys inaccessible by all user processes" suggests that keys can be accessible only for processes other than user processes. However, in the claim language applicant recites that keys are "for establishing a secure transmission channel from a user process of a first node to a user process of a second node", thus suggesting that user processes are able to access keys (possibly, delegating the accessing functions to other processes).

15. For purposes of further examination the phrase is treated as "the keys are not directly accessibly to user processes".

16. Claims 3-7, 10, 13 and 17 are rejected by virtue of their dependence.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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17. Claims 1, 3-4, 7, 10-12, 15-16 are rejected under 35 U.S.C. 103 (a) as being obvious over *Stein* (Lincoln D. Stein, "Web Security, a step-by -step reference guide", 1998, ISBN: 0201634899) in view of *Pfleeger* (Charles P. Pfleeger, "Security in computing", 2nd edition, 1996, ISBN: 0133374866) and further in view of *Carter et al.* (U.S. Patent No. 5845331) or alternatively in view *Fontana* (John Fontana, *Defending against Outlook viruses*, http://www.networkworld.com/archive/2000/99914_07-03-2000.html, 07/03/00).
18. As per claims 1, 3-4 and 7 *Stein* teaches SSL transaction between a client (browser) and a server, wherein a key, identification of the first node, and identification of the second node is sent from hardware of the first node (*a node hosting the client browser*) to hardware of the second node (*the node hosting the server*) (pg. 41, Fig. 3.2 transaction 6, and pg. 42 first §), receiving the key identification of the first node, and identification of the second node by the hardware of the second node and verifying the identification of the first node (pg. 41, Fig. 3.2, transaction 7, pg.42 second §) and the identification of the second node at the hardware of the second node , and storing the key at the hardware of the second node (pg. 42 first §). Once a SSL connection is in place the secure hardware of the first hardware and the secure hardware of the second node establish a channel over which the process of the first node and the process of the second node are able to communicate (*SSL Characteristics, in particular pg. 40*).
19. *Stein* does not explicitly teach that the second keys are inaccessible by all user processes.

20. *Pfleeger* teaches Layered Trust design and suggests to separate user processes from security functions in order to increase system's security (*Pfleeger, Layered Design section, pg. 302-303*). As shown in Fig. 7-20 in Layered Trust design model "the modules of each layer perform operations of a certain degree of sensitivity"; in particular the processes associated with Security Functions are not accessible to User Processes.

21. Encryption/decryption keys are confidential data and it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to separate any functions directed towards second keys from user processes (that reads on second keys inaccessible by all user processes) as taught by *Pfleeger*. One of ordinary skill in the art would have been motivated to perform such a modification in order to increase system's security.

22. *Stein* does not explicitly teach that unauthorized processes running on the first node are unable to send unauthorized messages.

23. *Carter et al.* and *Fontana* teach enabling unauthorized process running to send unauthorized messages.

24. In particular, *Carter et al.* teach to preventing unauthorized processes to conduct unauthorized activities (*col. 1 lines 24-35*), which reads on preventing unauthorized processes to unable to send unauthorized messages.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to prevent unauthorized processes running on the first node to send unauthorized messages. One of ordinary skill in the art would have been motivated

to perform such a modification in order to secure sending messages to only authorized processes.

25. Also, *Fontana* teaches Microsoft Outlook E-mail security patch that prevents unauthorized processes from sending unauthorized messages (*Fontana*, pg. 2).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to prevent unauthorized processes running on the first node to send unauthorized messages as taught by *Fontana*. One of ordinary skill in the art would have been motivated to perform such a modification in order to prevent worms from spreading to other nodes.

26. Fig. 7-20 (*Pfleeger*, pg. 302) shows that a system's hardware is accessed only by the system's kernel agent.

27. Claims 11 and 15 are substantially equivalent to claim 1; therefore claims 11 and 15 are similarly rejected.

28. As per claim 10 the SSL tunnel is established for the purpose of exchanging data, wherein the data is encrypted. As a result processing received messages after they are decrypted is implicit.

29. As per claims 5 and 6 *Stein's* invention is implemented using TCP/IP, which is a protocol that includes source and destination ports.

30. As per claims 12 and 16 neither *Stein* nor *Pfleeger* teach a key table. However, storing a key for inter-node communication would have been implicit so that all data communication could be encrypted. Furthermore, Official Notice is taken that it is old and well-known practice to utilize table data structure to store data (*such as key*,

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e.g. *U.S. Patent No. 6178244, Fig. 23 and 36*) given benefit of a quick and easy data retrieval using tables.

31. Claim 8 is rejected under 35 U.S.C. 103 (a) as being obvious over *Stein (Lincoln D. Stein, "Web Sercurity, a step-by -step reference guide", 1998, ISBN: 0201634899)* in view of *Pfleeger (Charles P. Pfleeger, "Security in computing", 2nd edition, 1996, ISBN: 0133374866)* and *Carter et al. (U.S. Patent No. 5845331)* and further in view of *Boden et al. (U.S. Patent No. 6182228)* or alternatively over *Stein (Lincoln D. Stein, "Web Sercurity, a step-by -step reference guide", 1998, ISBN: 0201634899)* in view of *Pfleeger (Charles P. Pfleeger, "Security in computing", 2nd edition, 1996, ISBN: 0133374866)* and *Fontana (John Fontana, Defending against Outlook viruses, http://www.networkworld.com/archive/2000/99914_07-03-2000.html, 07/03/00)* and further in view of *Boden et al. (U.S. Patent No. 6182228)*.
32. *Stein, Pfleeger and Carter et al. or Fontana* teach verifying the identification of the first node and the identification of the second node as discussed above.
33. *Stein, Pfleeger and Carter et al. or Fontana* do not explicitly teach that the verifying the identification of the first node and the second node by comprises verifying the identification of the first node and the identification of the second node in a channel state table accessible by the hardware of the second node and inaccessible by all the user processes of the second node.
34. *Boden et al.* teach verifying the identification of the first node and the identification of the second node in a channel state table (*col. 3 lines 9-60*).

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It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to verify the identification of the first node and the identification of the second node in a channel state table as taught by *Boden et al.* One of ordinary skill in the art would have been motivated to perform such a modification in order to restrict the inter-node communication only to the particular nodes.

35. *Boden et al.*'s invention is essentially an implementation of a firewall thus any data concerning the firewall (including the channel state table) should be treated as sensitive. As a result restricting user processes from accessing the channel state table would be implicit.

36. Claims 13-14 and 17-18 is rejected under 35 U.S.C. 103 (a) as being obvious over *Stein* (Lincoln D. Stein, "Web Security, a step-by -step reference guide", 1998, ISBN: 0201634899) in view of *Pfleeger* (Charles P. Pfleeger, "Security in computing", 2nd edition, 1996, ISBN: 0133374866) and further in view of *Benedyk et al.* (U.S. Pub. No. 20010055380) or alternatively over *Stein* (Lincoln D. Stein, "Web Security, a step-by -step reference guide", 1998, ISBN: 0201634899) in view of *Pfleeger* (Charles P. Pfleeger, "Security in computing", 2nd edition, 1996, ISBN: 0133374866) and *Fontana* (John Fontana, *Defending against Outlook viruses*, http://www.networkworld.com/archive/2000/99914_07-03-2000.html, 07/03/00) and further in view of *Benedyk et al.* (U.S. Pub. No. 20010055380) and *Bean et al.* (U.S. Patent No.4843541).

37. *Stein*, *Pfleeger* and *Carter et al.* teach a system for inter-node communication as discussed above.

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38. As per claims 13 and 17 *Stein, Pfleeger and Carter et al. or Boden et al.* do not explicitly teach connection tables accessible to secure connection management hardware mechanisms of communicating nodes, wherein the connection tables have number of entries, each entry identifying one of the user processes of both communicating inter-nodes.

39. *Benedyk et al.* teach a connection table that have number of entries, each identifying one of the user processes of both communicating inter-node (*Benedyk et al., Fig. 8*). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate a connection table as taught by *Benedyk et al.* One of ordinary skill in the art would have been motivated to perform such a modification in order to allow easy communication in a TCP/IP based networks by providing easy access to access to fundamental information required in the TCP communication. *The examiner points out that although the explicit example of the claim limitations were provided, defining ports in TCP/IP communication is old and well known in the art of computing. In fact some of the ports used by the most common applications are referred to as "Well-known" ports.*

40. *Stein, Pfleeger, Carter et al. and Benedyk et al.* do not explicitly teach that the connection table identifies one or more partitions of the particular node.

41. *Bean et al.* teach unique partition identifiers identifying nodes partitions (*col. 50 lines 55-66*).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include partition identifiers as taught by *Bean et al.* within the first and

second connection tables. One of ordinary skill in the art would have been motivated to perform such a modification in order to extend the security enhancement and operation speed to systems wherein plurality of different preferred guest programming systems could run simultaneously in the different partitions.

42. *Benedyk et al.* do not suggest restricting access to the connection table and as per claims.


43. Also, as per claims 14 and 18 *Benedyk et al.* associate entries in key table with corresponding entries of the connection table (*Benedyk et al.*, Fig. 7).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Poltorak whose telephone number is (571) 272-3840. The examiner can normally be reached Monday through Thursday from 9:00 a.m. to 4:00 p.m. and alternate Fridays from 9:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (571) 272-3838. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


12/21/05

David Y. Jung
Primary Examiner


12/23/05